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## CLASSIFICATION OF THE FOSSORIAL, PREDACEOUS AND PARASITIC WASPS, OR THE SUPERFAMILY VESPOIDEA.

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(Paper No. 6.—Continued from p. 137.)

### FAMILY XXVIII.—Vespidae.

This family is restricted to the paper-making wasps, all social species living in large communities and having three distinct sexes, female, worker, and male, thus agreeing with the social bees, the *Apidae* and *Bombidae*, and with many ants, *Dorylidae*, *Myrmicidae*, *Formicidae*, etc.

In some species, too, like the ants, there appear to be two forms of the worker.

Deceived by their habits, for structurally they are widely separated, Westwood and Packard thought the social wasps were allied to the *Apidae*, and in their scheme of classification have placed them next to the bees, with which they have nothing in common.

Cresson, Kirby and most late writers seem to have followed them, but in my opinion it is clearly an unnatural position; they have no relationship whatever with the bees, and are a component of this great complex, but with affinities, through some exotic forms, allying them with the next great complex, or the superfamily FORMICOIDEA.

Two very distinct groups, here called subfamilies, have been recognized. They were first correctly indicated by C. G. Thomson, the distinguished Swedish entomologist, who called them tribes.

#### Table of Subfamilies.

Hind wings entire, *without* an anal lobe, mesepisterna not separated . . . . . Subfamily I.—Vespinae.

Hind wings *with* a distinct anal lobe; mesepisterna separated . . . . . Subfamily II.—Polistinae.

## SUBFAMILY I.—Vespinæ.

1874. Vespinæ, Tribus. Thomson, Skand. Hym., III., p. 6.

The absence of an anal lobe in the hind wings, and the non-separated mesepisternum, distinguish the group. The species, too, are much shorter, more robust, with a decidedly shorter mesonotum.

*Paravespa*, Radoszkowsky, described in 1886, I do not know, but have incorporated it from the description alone.

Three genera have been recognized, separable as follows :

## Table of Genera.

First abdominal segment broadly truncate at base.

Eyes not extending to the base of the mandibles.....2.

Eyes extending to the base of the mandibles, or very nearly.

Third cubital cell along the radius fully as long as along the cubitus.....*Vespa*, Linné.

(Type *V. vulgaris*, Linné.)

Third cubital cell along the radius much shorter than along the cubitus .....*Paravespa*, Radoszkowsky.

(Type *P. Komarowii*, Radoszk.)

2. Third submarginal cell along the radius longer than along the cubitus, or about twice as long ; clypeus longer than wide, sinuate or slightly emarginate anteriorly and semicircularly emarginate at sides anteriorly.....*Vespula*, Thomson.

(Type *Vespa austriaca*, Panzer.)

## SUBFAMILY II.—Polistinæ.

1874. Polistina, Tribus. Thomson, Skand. Hym., III., p. 6.

In this subfamily the hind wings have an anal lobe, and the mesepisternum is separated.

The genera are numerous, and have reached their greatest development in tropical countries. The group is of great economic importance, as the various genera destroy the more destructive Lepidopterous larvæ.

## Table of Genera.

Second cubital cell receiving both recurrent nervures.....2.

Second and third cubital cells each receiving a recurrent nervure.

Second cubital cell petiolate ; clypeus terminating in a tooth ; mandibles short, acutely dentate at apex ..... *Anthreneida*, White.

(Type *Vespa Sumatræ*, Weber.)



- scarcely so broad as the width of the eyes; mandibles 4-dentate, the teeth subequal; clypeus angulate anteriorly. . . . . *Polybia*, Lepeletier.  
(Type *Polistes liliacea*, Fabr.)
7. Body elongate, cylindrical, or fusiform, the abdominal petiole very long; mandibles 3- or 4-dentate. . . . . 8.  
Body rather short, not elongate, the abdominal petiole not especially long; mandibles bidentate.  
Body of abdomen rotund; eyes small, the malar space distinct. . . . . *Gyrostoma*, Kirby.  
(Type *Cyclostoma orientalis*, Kirby.)  
Body of abdomen short-ovate; eyes large, the malar space very small or linear. . . . . *Tatua* Saussure.  
(Type *Vespa morio*, Fabr.)
8. Body of abdomen fusiform, the second segment pedicellate. . . . . 9.  
Body of abdomen elongate, cylindrical or nearly, the second segment *not* pedicellate and scarcely longer than the third. . . . . *Apoica*, Lepeletier.  
(Type *Polistes virginea*, Fabr.)
9. Second cubital cell trapezoidal, narrowed above; mandibles 4-dentate.  
Clypeus short, angulate anteriorly; maxillary palpi 5-jointed. . . . . *Belonogaster*, Saussure.  
(Type *Vespa grisea*, Fabr.)  
Clypeus anteriorly slightly emarginate and bidentate; maxillary palpi 6-jointed, the last joint the longest. . . . . *Mischocyttarus*, Saussure.  
(Type *Zethus labiatus*, Fabr.)  
Second cubital cell triangular; mandibles 3-dentate; clypeus wider than long, subemarginate at apex; maxillary palpi 6-jointed, the first joint elongate, the last two small. . . . . *Paramischocyttarus*, Magretti.  
(Type *P. subtilis*, Magretti.)

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#### ERRATA.

In Mr. G. B. King's paper on the "Coccidæ of British North America," in the June number, the following corrections should be made:

Page 159, for *Ripersia basi* read *R. lasii*.

Page 160, for *Pulvinaria brassicæ* read *P. brassiæ*.

Page 160, *Aspidiotus Dearnessi*, Ontario (London), is from Lake Huron, not London.